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CORRELATION OF BODY MEASUREMENTS OF LAMB CARCASSES

WITH WEIGHT AND GRADE OF CARCASS

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## CORRELATION OF BODY MEASUREMENTS OF LAMB CARCASSES WITH WEIGHT AND GRADE OF CARCASS [1]

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As a part of a study of quality in meats conducted at the Agricultural Research Center, Beltsville, Maryland, lambs are graded by a committee familiar with the United States Department of Agriculture standards for grades of slaughter lambs and lamb carcasses. The carcasses, also, are graded and measured to determine if any relationship exists between carcass measurements and weight and grade of carcass.

### Material and Methods

The 293 carcasses used in this study represent grade, crossbred, and purebred lambs of Fine Wool and Mutton Type breeding. They were produced in various parts of the country and under widely differing methods of production. Measurements were made of:

1. Length of carcass
2. Depth of carcass
3. Width of carcass -
   (a) Legs
   (b) Loin
   (c) Paunch
   (d) Crops
   (e) Shoulder

4. Thickness of fat -
   (a) Over rib-eye
   (b) Side of hotel rack (over 12th rib)
   (c) Side of shoulder (over 5th rib)

The length of carcass and thickness-of-fat measurements were taken with a steel measuring line of centimeter graduation. Other measurements were taken with a pair of large calipers.

### Length of Carcass

By using steel skewers the lateral tuberosity of the tuber ischii bone was located. In a similar manner the point of curvature where the spinal column extends toward the atlas joint between the fifth and sixth cervical vertebra was located. The length of body measurement represented the distance between the two described points.

## Depth of Carcass

Calipers were used to determine the depth of the carcass. This measurement was taken at the third dorsal spinous process on a plane parallel with the floor and represents the distance from the outside of the meat over the spinous process to the lower edge of the split breast bone (sternum).

## Width of Carcass

The width of the carcass was taken at five places and again calipers were used in making these measurements. An average of the five width measurements was used for the average width of carcass.

(a) Legs. - This measurement represents the distance through the legs from outside to outside at the widest point, on a line parallel with the floor (trochanter major).

(b) Loin. - The width of loin was taken at the fourth lumbar vertebra.

(c) Paunch. - The paunch measurement represents the point of greatest width on the carcass and was taken at a point approximately midway on the side between the backbone and opening of carcass along the belly.

(d) Crops. - This measurement was taken at the middle of the chuck between the third and fourth ribs and represents the maximum thickness of the carcass at that point.

(e) Shoulder. - The thickness of shoulder measurement represents the thickest part of the shoulders or chuck and was taken at the midpoint of the fourth rib.

Thickness of Fat

(a) Over Rib Eye. - This measurement was taken between the twelfth
and thirteenth ribs after the carcass was separated into whole-
sale cuts, at a point along the back three centimeters from the
transverse dorsal process.

(b) Side of Shoulder. - The thickness of fat on the chuck end of
the hotel rack was taken on each side of the carcass.  A
measuring stick extending across the cut surface touching the
dorsal edge of the fifth dorsal vertebra served as a guide in
measuring the thickness of fat.

(c) Side of Hotel Rack. - This measurement was made in a fashion
similar to that described under (b) except that the thickness
of fat was measured over the twelfth rib on a plane with the
dorsal side of the twelfth dorsal vertebra.

For the purpose of this study the carcasses were grouped according to
grade, then the carcasses within each grade were grouped on the basis of a
five pound weight range.  It was thought desirable to balance the number of
carcasses that graded high and those that graded low in the grade in order
that the results might more accurately reflect the relationship between
grades without being influenced by the population within the grade and weight
group.

Correlations were obtained between the various carcass measurements
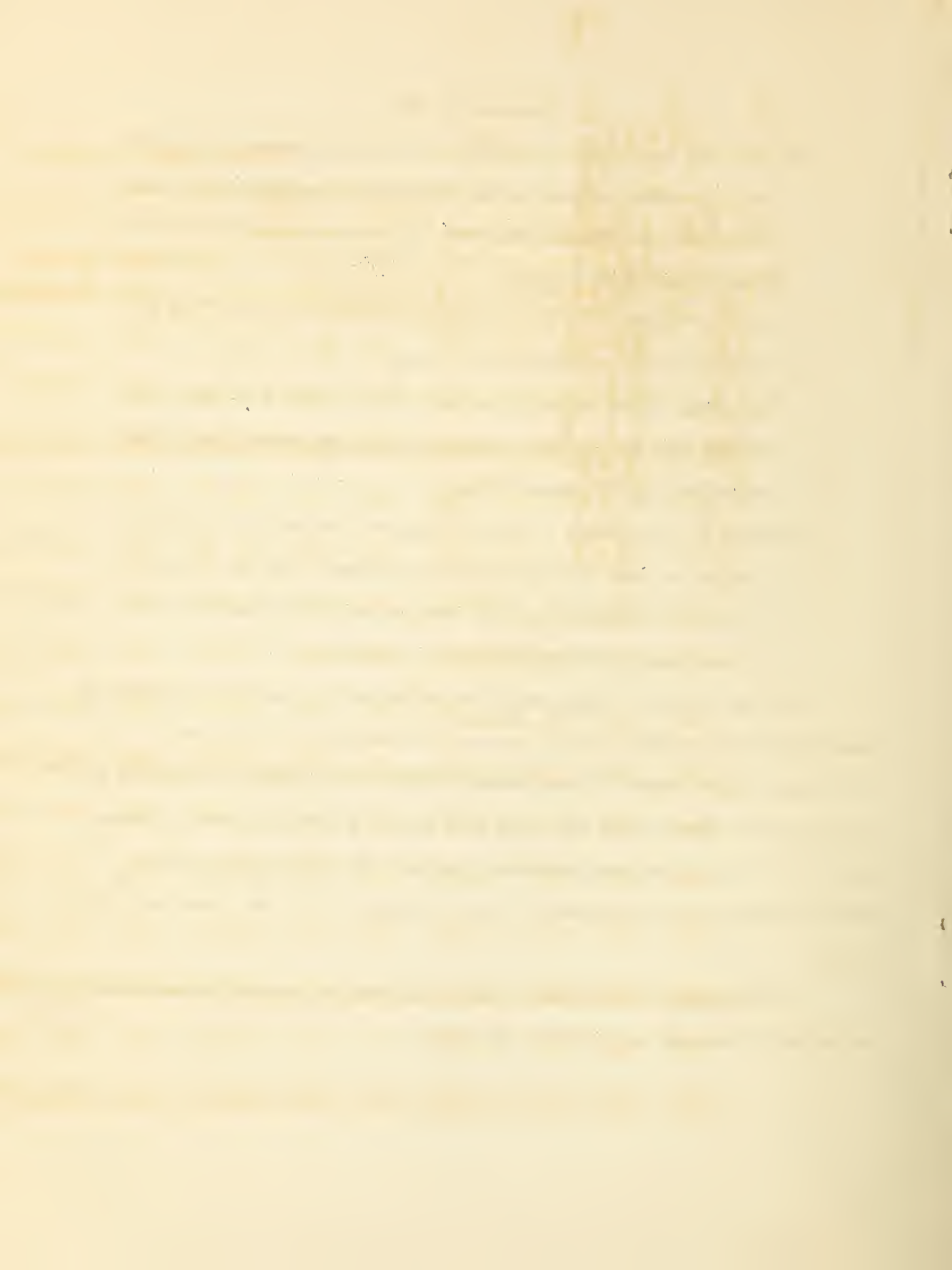or ratios of carcass measurements and grade.

Table I. - Lamb carcass grade, weight, yield, measurements, and measurement ratios on a grade and weight basis.

| Weight group Lbs. | No. lambs | Carcass grade | Carcass weight Lbs. | Dressing Per cent | Length cm. | Depth cm. | Hips cm. | Loin cm. | Paunch cm. | Crops cm. | Shldr cm. | Av. cm. | Eye cm. | Rib cm. | Shldr cm. | Av. cm. | Av. Depth | Av. Width | Depth to Av. Width | Hips | Loin | Paunch | Crops | Shldr. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 45.00-49.99 | 6 | Choice | 47.88 | 52.55 | 72.00 | 26.92 | 20.80 | 16.65 | 23.83 | 17.68 | 18.93 | 19.58 | 0.67 | 1.40 | 1.25 | 1.11 | 2.67 | 3.68 | 1.37 | 3.46 | 4.32 | 3.02 | 4.07 | 3.80 |
| 40.00-44.99 | 16 | Choice | 42.05 | 52.09 | 67.99 | 25.79 | 20.39 | 15.81 | 23.06 | 17.22 | 18.34 | 18.96 | .61 | 1.14 | 1.09 | .95 | 2.64 | 3.59 | 1.36 | 3.33 | 4.30 | 2.95 | 3.95 | 3.71 |
| 35.00-39.99 | 9 | Choice | 37.50 | 49.36 | 66.24 | 24.53 | 19.59 | 14.47 | 21.93 | 16.53 | 17.54 | 18.01 | .54 | .98 | .91 | .81 | 2.70 | 3.68 | 1.36 | 3.38 | 4.58 | 3.02 | 4.01 | 3.78 |
| 45.00-49.99 | 13 | Good | 46.48 | 49.45 | 73.00 | 27.36 | 21.08 | 15.27 | 22.88 | 16.97 | 18.19 | 18.88 | .33 | .90 | .77 | .67 | 2.67 | 3.87 | 1.45 | 3.46 | 4.78 | 3.19 | 4.30 | 4.01 |
| 40.00-44.99 | 65 | Good | 41.44 | 48.64 | 71.92 | 26.56 | 20.29 | 14.48 | 21.59 | 16.37 | 17.39 | 18.02 | .37 | .84 | .72 | .64 | 2.71 | 3.99 | 1.47 | 3.54 | 4.97 | 3.33 | 4.39 | 4.14 |
| 35.00-39.99 | 75 | Good | 37.42 | 47.72 | 69.53 | 25.69 | 19.49 | 14.12 | 21.29 | 15.89 | 16.63 | 17.48 | .32 | .78 | .71 | .60 | 2.71 | 3.98 | 1.47 | 3.57 | 4.93 | 3.27 | 4.38 | 4.18 |
| 30.00-34.99 | 37 | Good | 32.54 | 47.75 | 66.36 | 24.36 | 18.75 | 13.12 | 20.53 | 14.95 | 16.21 | 16.71 | .27 | .67 | .67 | .54 | 2.72 | 3.97 | 1.46 | 3.54 | 5.06 | 3.23 | 4.44 | 4.09 |
| 25.00-29.99 | 10 | Good | 28.65 | 47.02 | 64.12 | 23.64 | 17.88 | 12.38 | 19.17 | 14.25 | 15.27 | 15.79 | .28 | .63 | .66 | .52 | 2.71 | 4.06 | 1.50 | 3.59 | 5.18 | 3.34 | 4.50 | 4.20 |
| 20.00-24.99 | 5 | Good | 23.65 | 45.28 | 59.98 | 21.72 | 16.94 | 11.92 | 19.88 | 13.88 | 14.42 | 15.41 | .20 | .40 | .40 | .33 | 2.76 | 3.89 | 1.41 | 3.54 | 5.03 | 3.02 | 4.32 | 4.16 |
| 35.00-39.99 | 8 | Medium | 36.72 | 47.10 | 71.04 | 25.68 | 19.36 | 13.35 | 20.62 | 15.74 | 16.50 | 17.11 | .11 | .48 | .35 | .31 | 2.77 | 4.15 | 1.50 | 3.67 | 5.32 | 3.45 | 4.51 | 4.31 |
| 30.00-34.99 | 8 | Medium | 32.56 | 45.91 | 68.45 | 25.21 | 18.82 | 13.00 | 20.04 | 14.99 | 15.85 | 16.54 | .15 | .52 | .34 | .34 | 2.72 | 4.24 | 1.52 | 3.64 | 5.27 | 3.42 | 4.57 | 4.32 |
| 25.00-29.99 | 10 | Medium | 28.52 | 44.77 | 66.76 | 24.14 | 17.32 | 11.73 | 19.39 | 14.17 | 15.55 | 15.63 | .14 | .42 | .38 | .31 | 2.77 | 4.27 | 1.54 | 3.85 | 5.69 | 3.44 | 4.71 | 4.29 |
| 20.00-24.99 | 7 | Medium | 22.82 | 44.53 | 62.34 | 22.69 | 16.57 | 11.19 | 17.97 | 13.10 | 13.51 | 14.47 | .13 | .33 | .41 | .29 | 2.75 | 4.31 | 1.57 | 3.76 | 5.57 | 3.47 | 4.76 | 4.61 |
| 20.00-24.99 | 9 | Plain | 21.14 | 42.16 | 62.53 | 22.11 | 15.91 | 9.88 | 17.12 | 12.82 | 13.27 | 13.80 | .08 | .13 | .16 | .12 | 2.83 | 4.53 | 1.60 | 3.93 | 6.33 | 3.65 | 4.88 | 4.71 |
| 15.00-19.99 | 8 | Plain | 18.78 | 42.66 | 60.74 | 21.68 | 15.52 | 9.81 | 16.54 | 12.50 | 12.66 | 13.41 | .05 | .09 | .12 | .09 | 2.80 | 4.53 | 1.62 | 3.91 | 6.19 | 3.67 | 4.86 | 4.80 |

Results

Table No. 1 was constructed to give a comparison of carcasses of similar grade but of different weights.  This table reveals that the dressing percentage of lambs increases as the lambs become heavier; also, that the length, depth, and width of carcasses, and thickness of fat, increase as the carcasses increase in weight. Within a given grade the relationship of one carcass dimension to another changes little as a result of variation in weight.  Perhaps there is a suggestion that the length of carcasses in relation to width and depth tends to increase slightly as the weight groups become lighter, but this is far from being conclusive.

Table No. 2 was constructed to compare carcasses of different grades but of similar weight.  This table shows very conclusively that yield or dressing percentage drops rather sharply from one grade to the next lower grade.  It also reveals that in the same weight group the lower grade carcasses are both longer and deeper than the higher grade carcasses.  The higher grade carcasses, however, are wider than the lower grade carcasses and have a thicker covering of fat.  The ratio of length to width decreases from any given grade to the grade immediately higher.  The ratio of length to depth, however, was almost constant for all grades of comparable weight.

Table 2. - Lamb carcass grade, weight, yield, measurements, and measurement ratios on a weight and grade basis.

| Weight group Lbs. | No. lambs | Carcass grade | Carcass weight Lbs. | Dressing Per cent | Length cm. | Depth cm. | Hips cm. | Loin cm. | Paunch cm. | Crops cm. | Shldr cm. | Av. cm. | Eye cm. | Rib cm. | Shldr cm. | Av. cm. | Ratio of length to Depth | Ratio of Depth to Av. Width | Av. to Av. Width | Hips | Loin | Paunch | Crops | Shldr |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 45.00–49.99 | 6 | Choice | 47.88 | 52.55 | 72.00 | 26.92 | 20.80 | 16.65 | 23.83 | 17.68 | 18.93 | 19.58 | 0.67 | 1.40 | 1.25 | 1.11 | 2.67 | 3.68 | 1.37 | 3.46 | 4.32 | 3.02 | 4.07 | 3.80 |
| | 13 | Good | 46.48 | 49.45 | 73.00 | 27.36 | 21.08 | 15.27 | 22.88 | 16.97 | 18.19 | 18.88 | .33 | .90 | .77 | .67 | 2.67 | 3.87 | 1.45 | 3.46 | 4.73 | 3.19 | 4.30 | 4.01 |
| 40.00–44.99 | 16 | Choice | 42.05 | 52.09 | 67.99 | 25.79 | 20.39 | 15.81 | 23.06 | 17.22 | 18.34 | 18.96 | .61 | 1.14 | 1.09 | .95 | 2.64 | 3.59 | 1.36 | 3.33 | 4.30 | 2.95 | 3.95 | 3.71 |
| | 65 | Good | 41.44 | 48.64 | 71.92 | 26.56 | 20.29 | 14.48 | 21.59 | 16.37 | 17.39 | 18.02 | .37 | .84 | .72 | .64 | 2.71 | 3.99 | 1.47 | 3.54 | 4.97 | 3.33 | 4.39 | 4.14 |
| 35.00–39.00 | 9 | Choice | 37.50 | 49.36 | 66.24 | 24.53 | 19.59 | 14.47 | 21.93 | 16.53 | 17.54 | 18.01 | .54 | .98 | .91 | .81 | 2.70 | 3.68 | 1.36 | 3.38 | 4.58 | 3.02 | 4.01 | 3.78 |
| | 75 | Good | 37.42 | 47.72 | 69.53 | 25.69 | 19.49 | 14.12 | 21.29 | 15.89 | 16.63 | 17.48 | .32 | .78 | .71 | .60 | 2.71 | 3.98 | 1.47 | 3.57 | 4.93 | 3.27 | 4.38 | 4.18 |
| | 8 | Medium | 36.72 | 47.10 | 71.04 | 25.68 | 19.36 | 13.35 | 20.62 | 15.74 | 16.50 | 17.11 | .11 | .48 | .35 | .31 | 2.77 | 4.15 | 1.50 | 3.67 | 5.32 | 3.45 | 4.51 | 4.31 |
| 30.00–34.99 | 37 | Good | 32.54 | 47.75 | 66.36 | 24.36 | 18.75 | 13.12 | 20.53 | 14.95 | 16.21 | 16.71 | .27 | .67 | .67 | .54 | 2.72 | 3.97 | 1.46 | 3.54 | 5.06 | 3.23 | 4.44 | 4.09 |
| | 8 | Medium | 32.56 | 45.91 | 68.45 | 25.21 | 18.82 | 13.00 | 20.04 | 14.99 | 15.85 | 16.54 | .15 | .52 | .34 | .34 | 2.72 | 4.24 | 1.52 | 3.64 | 5.27 | 3.42 | 4.57 | 4.32 |
| 25.00–29.99 | 10 | Good | 28.65 | 47.02 | 64.12 | 23.64 | 17.83 | 12.38 | 19.17 | 14.25 | 15.27 | 15.79 | .28 | .63 | .66 | .52 | 2.71 | 4.06 | 1.50 | 3.59 | 5.18 | 3.34 | 4.50 | 4.20 |
| | 10 | Medium | 28.52 | 44.77 | 66.76 | 24.14 | 17.32 | 11.73 | 19.39 | 14.17 | 15.55 | 15.63 | .14 | .42 | .38 | .31 | 2.77 | 4.27 | 1.54 | 3.85 | 5.69 | 3.44 | 4.71 | 4.29 |
| 20.00–24.99 | 5 | Good | 23.65 | 45.28 | 59.98 | 21.72 | 16.94 | 11.92 | 19.83 | 13.88 | 14.42 | 15.41 | .20 | .40 | .40 | .33 | 2.76 | 3.89 | 1.41 | 3.54 | 5.03 | 3.02 | 4.32 | 4.16 |
| | 7 | Medium | 22.82 | 44.53 | 62.34 | 22.69 | 16.57 | 11.19 | 17.97 | 13.10 | 13.51 | 14.47 | .13 | .33 | .41 | .29 | 2.75 | 4.31 | 1.57 | 3.76 | 5.57 | 3.47 | 4.76 | 4.61 |
| | 9 | Plain | 21.14 | 42.16 | 62.53 | 22.11 | 15.91 | 9.88 | 17.12 | 12.82 | 13.27 | 13.80 | .08 | .13 | .16 | .12 | 2.83 | 4.53 | 1.60 | 3.93 | 6.33 | 3.65 | 4.83 | 4.71 |
| 15.00–19.99 | 8 | Plain | 18.78 | 42.66 | 60.74 | 21.68 | 15.52 | 9.81 | 16.54 | 12.50 | 12.66 | 13.41 | .05 | .09 | .12 | .09 | 2.80 | 4.53 | 1.62 | 3.91 | 6.19 | 3.67 | 4.36 | 4.80 |

## Correlation of Ratios of Carcass Measurements with Grade

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Ratio of Depth of body to average width | | | | | | | | -.69 ±.02 |
| " | " Length " | " | " | depth of chest | | | | -.20 ±.04 |
| " | " | " | " | " | " | average width | | -.75 ±.02 |
| " | " | " | " | " | " | width of loin | | -.77 ±.02 |
| " | " | " | " | " | " | " | " shoulder | -.69 ±.02 |
| " | " | " | " | " | " | " | " crops | -.67 ±.02 |
| " | " | " | " | " | " | " | " legs | -.66 ±.02 |
| " | " | " | " | " | " | " | " paunch | -.53 ±.03 |
| Average thickness of fat | | | | | | | | +.72 ±.02 |

The correlation of ratios of body measurements with grade of carcass was significant in most instances. The coefficient of correlation for the ratio of length of body to depth of chest of -.20 ±.04 is not sufficiently high to be of any significance. In the case of the coefficient of correlation for the ratio of length of body to width of paunch the result was somewhat lower than for the ratios of other measurements. The coefficients of correlation for other ratios with grade were relatively high and grouped rather closely. The most significant correlation was for the ratio of length of body to width of loin in relation to grade, which was followed very closely by the ratio of length of body to average width of the carcass.

Since the ratio for length of body to width of loin in relation to carcass grade gave the highest coefficient of correlation, this ratio was used to combine with other factors to obtain a closer correlation with grade.

## Multiple Correlation Equations built up from Grade and Loin Ratio
### (from uncoded data, not from frequency tables)

Carcass grade and loin ratio to length:  $R = -.79 \pm .01$

Carcass grade, carcass weight, and loin ratio: $R = .82 \pm .01$

Carcass grade, carcass weight, loin ratio, and breed:[1] $R = .88 \pm .01$

Carcass grade, carcass weight, loin ratio, age (months)[2] $R = .85 \pm .01$

Carcass grade, carcass weight, loin ratio, breed, and age: $R = .88 \pm .01$

When carcass weight is added to loin ratio the correlation coefficient is increased from 0.7656 to 0.8249 and the standard error of estimate is reduced from 1.40 thirds of grade to 1.30 thirds of grade. The addition of breeding raised the coefficient of correlation to 0.8766 and using age instead of breed it was raised to 0.8532. The coefficient of correlation for all four factors was 0.8768, or practically unchanged from the results obtained omitting age.

[1] See page 16
[2] Ages ranged from 5 to 10 months.

Formulas for estimating the grade of lamb carcasses by use of carcass measurements and other factors were derived. Table 3 shows the composite committee grade for the individual carcasses and the estimated grades arrived at by using Formula No. 1 which involves weight of carcass and ratio of length to width of loin, and Formula No. 2 which uses weight of carcass, ratio of length to width of loin, and breed.

By using Formula No. 1 it was found that 31 percent of the estimated grades fell within the same third of grade as the composite committee grade; that 75 percent of the estimated grades fell within the same full grade as the composite committee grade, which left 25 percent that did not agree with the composite grade. The results obtained from the use of Formula No. 2 were as follows: $37\frac{1}{2}$ percent of the estimated grades fell within the same third of grade as the composite committee grade; 80 percent fell within the same full grade as the committee grade, leaving 20 percent which did not agree with the committee grade. The addition of breed as a factor increased the agreement between the estimated and composite grade 5 percent.

Table 3.- Lamb carcass grades, Comparison of committee grades with grades as determined from two equations.

| Lamb No. | Carcass grade | Carcass weight | Loin ratio | Code no. for breed1/ | Code no. for grade | Estimated grades from equations 2/ | |
|---|---|---|---|---|---|---|---|
| | | lbs. | | | | No. 1 | No. 2 |
| 2601 | Choice | 50.75 | 4.4 | 2 | 2 | 2 Ch. | 2 Ch. |
| 2667 | " | 51.5 | 4.3 | 2 | 2 | 2 " | 1 Ch.≠ |
| | | | | | | | |
| 2596 | Choice | 47.0 | 4.2 | 2 | 2 | 2 Ch. | 2 Ch. |
| 2664 | " | 48.0 | 4.0 | 2 | 2 | 2 " | 1 Ch.≠ |
| 2595 | " | 48.75 | 4.4 | 2 | 2 | 2 " | 2 Ch. |
| 2D109 | " | 45.25 | 4.5 | 1 | 2 | 3 Ch.- | 2 " |
| 3S110 | " | 49.75 | 4.4 | 1 | 2 | 3 " | 1 Ch.≠ |
| 3S124 | " | 48.5 | 4.5 | 1 | 2 | 3 " | 2 Ch. |
| | | | | | | | |
| 2593 | Choice ≠ | 43.0 | 4.0 | 2 | 1 | 2 Ch. | 2 Ch. |
| 3S200 | " ≠ | 42.75 | 4.3 | 1 | 1 | 3 Ch.- | 2 " |
| 3Sd305 | " ≠ | 43.0 | 4.0 | 1 | 1 | 2 Ch. | 1 Ch.≠ |
| 694 | " | 40.5 | 4.3 | 2 | 2 | 3 Ch.- | 3 Ch.- |
| 2644 | " | 40.0 | 4.0 | 2 | 2 | 2 Ch. | 2 Ch. |
| 2682 | " | 43.5 | 4.0 | 2 | 2 | 2 " | 2 " |
| 2661 | " | 41.25 | 4.3 | 2 | 2 | 3 Ch.- | 3 Ch.- |
| 2702 | " | 43.5 | 4.8 | 2 | 2 | 4 Gd.≠ | 3 " |
| 2D110 | " | 40.0 | 3.9 | 1 | 2 | 2 Ch. | 2 Ch. |
| 3D102 | " | 41.75 | 4.1 | 1 | 2 | 2 Ch. | 2 Ch. |
| 3Sh319 | " | 43.75 | 4.6 | 1 | 2 | 3 Ch.- | 2 " |
| 3Sd316 | " | 42.5 | 4.9 | 1 | 2 | 4 Gd.≠ | 3 Ch.- |
| 3Sd304 | " | 40.0 | 4.7 | 1 | 2 | 4 " | 3 " |
| 4167 | " - | 42.25 | 4.4 | 2 | 3 | 3 Ch.- | 3 " |
| 436 | " - | 43.0 | 4.4 | 2 | 3 | 3 " | 3 " |
| 4Sh301 | " - | 42.0 | 4.3 | 1 | 3 | 3 " | 2 Ch. |
| | | | | | | | |
| 4Sd318 | Choice ≠ | 36.0 | 4.6 | 1 | 1 | 4 Gd.≠ | 4 Gd.≠ |
| 3Sd308 | " ≠ | 36.75 | 4.1 | 1 | 1 | 3 Ch.- | 3 Ch.- |
| 4672 | " | 39.0 | 4.8 | 2 | 2 | 4 Gd.≠ | 4 Gd.≠ |
| 3Sh225 | " | 38.0 | 4.0 | 1 | 2 | 3 Ch.- | 2 Ch. |
| 3Sd300 | " | 36.75 | 4.6 | 1 | 2 | 4 Gd.≠ | 4 Gd.≠ |
| 4Sd301 | " | 37.25 | 4.9 | 1 | 2 | 5 Gd. | 4 " |
| 5Sd300 | " | 38.5 | 4.6 | 1 | 2 | 4 Gd.≠ | 3 Ch.- |
| 4178 | " - | 39.0 | 5.0 | 2 | 3 | 5 Gd. | 4 Gd.≠ |
| 3Sd315 | " - | 36.25 | 4.7 | 1 | 3 | 4 Gd.≠ | 4 Gd.≠ |
| | | | | | | | |
| 3D107 | Choice | 33.5 | 4.3 | 1 | 2 | 4 Gd.≠ | 3 Ch.- |
| 3Sd201 | " | 32.5 | 4.5 | 1 | 2 | 4 " | 4 Gd.≠ |
| | | | | | | | |
| 232 | Good | 47.5 | 4.5 | 3 | 5 | 3 Ch.- | 3 Ch.- |
| 259 | " | 45.75 | 5.2 | 3 | 5 | 5 Gd. | 4 Gd.≠ |
| 551 | " | 47.0 | 4.8 | 2 | 5 | 4 Gd.≠ | 3 Ch.- |
| 774 | " | 47.0 | 4.8 | 2 | 5 | 4 " | 3 " |
| 440 | " | 45.0 | 5.0 | 2 | 5 | 4 " | 4 Gd.≠ |
| 2676 | " | 47.75 | 4.9 | 2 | 5 | 4 " | 3 Ch.- |
| 6948 | " | 45.75 | 5.3 | 5 | 5 | 5 Gd. | 6 Gd.- |
| 6972 | " | 46.0 | 4.9 | 5 | 5 | 4 Gd.≠ | 5 Gd. |

| Lamb No. | Carcass grade | Carcass weight | Loin ratio | Code no. for breed1/ | Code no. for grade | Estimated grades from equations 2/ No. 1 | No. 2 |
|---|---|---|---|---|---|---|---|
| | | lbs. | | | | | |
| 6992 | Good | 17.0 | 5.1 | 5 | 5 | 4 Gd.≠ | 5 Gd. |
| 5 | " | 16.25 | 4.4 | 5 | 5 | 3 Ch.- | 4 Gd.≠ |
| 3 | " | 16.25 | 4.7 | 5 | 5 | 3 " | 4 " |
| 6515 | " | 16.5 | 4.4 | 5 | 5 | 3 " | 4 " |
| 6666 | " | 16.5 | 4.5 | 5 | 5 | 3 " | 4 " |
| 1038 | Good ≠ | 40.25 | 4.9 | 2 | 4 | 5 Gd. | 4 Gd.≠ |
| 1213 | " ≠ | 41.5 | 5.0 | 2 | 4 | 5 " | 4 " |
| 594 | " ≠ | 43.25 | 4.7 | 2 | 4 | 4 Gd.≠ | 3 Ch.- |
| 783 | " ≠ | 42.5 | 4.8 | 2 | 4 | 4 " | 4 Gd.≠ |
| 319 | " ≠ | 44.5 | 5.0 | 3 | 4 | 4 " | 4 " |
| 3726 | " ≠ | 43.0 | 4.3 | 2 | 4 | 3 Ch.- | 2 Ch. |
| 406 | " ≠ | 41.25 | 4.6 | 2 | 4 | 4 Gd.≠ | 3 Ch.- |
| 376 | " ≠ | 41.0 | 5.3 | 3 | 4 | 5 Gd. | 5 Gd. |
| 1S104 | " ≠ | 41.75 | 5.4 | 1 | 4 | 6 Gd.- | 4 Gd.≠ |
| 1Sh304 | " ≠ | 40.5 | 5.2 | 1 | 4 | 5 Gd. | 4 Gd.≠ |
| 6881 | " ≠ | 42.0 | 4.6 | 5 | 4 | 4 Gd.≠ | 5 Gd. |
| 33 | " ≠ | 43.5 | 4.5 | 5 | 4 | 3 Ch.- | 4 Gd.≠ |
| 2658 | " ≠ | 41.0 | 4.5 | 4 | 4 | 3 " | 4 " |
| 3969 | " | 41.5 | 5.1 | 2 | 5 | 5 Gd. | 4 " |
| 115 | " | 41.0 | 4.7 | 3 | 5 | 4 Gd.≠ | 4 " |
| 170 | " | 42.0 | 5.2 | 3 | 5 | 5 Gd. | 5 Gd. |
| 201 | " | 44.75 | 5.1 | 3 | 5 | 5 " | 4 Gd.≠ |
| 221 | " | 41.0 | 5.3 | 3 | 5 | 5 " | 5 Gd. |
| 233 | " | 44.0 | 4.7 | 3 | 5 | 4 Gd.≠ | 4 Gd.≠ |
| 282 | " | 42.75 | 4.8 | 3 | 5 | 4 " | 4 " |
| 293 | " | 41.75 | 5.1 | 3 | 5 | 5 Gd. | 5 Gd. |
| 636 | " | 44.0 | 4.8 | 2 | 5 | 4 Gd.≠ | 3 Ch.- |
| 662 | " | 42.75 | 4.2 | 2 | 5 | 2 Ch. | 2 Ch. |
| 680 | " | 40.75 | 4.8 | 2 | 5 | 4 Gd.≠ | 4 Gd.≠ |
| 702 | " | 40.25 | 4.5 | 2 | 5 | 4 " | 3 Ch.- |
| 815 | " | 43.0 | 5.0 | 2 | 5 | 5 Gd. | 4 Gd.≠ |
| 363 | " | 44.5 | 5.5 | 3 | 5 | 6 Gd.- | 5 Gd. |
| 3779 | " | 44.25 | 5.1 | 2 | 5 | 5 Gd. | 4 Gd.≠ |
| 283 | " | 43.25 | 5.1 | 2 | 5 | 5 " | 4 " |
| 260 | " | 43.0 | 5.7 | 3 | 5 | 6 Gd.- | 6 Gd.- |
| 265 | " | 42.5 | 4.8 | 3 | 5 | 4 Gd.≠ | 4 Gd.≠ |
| 332 | " | 42.5 | 5.6 | 3 | 5 | 6 Gd.- | 6 Gd.- |
| 228 | " | 41.0 | 5.4 | 3 | 5 | 6 " | 5 Gd. |
| 3657 | " | 40.75 | 4.6 | 2 | 5 | 4 Gd.≠ | 3 Ch.- |
| 3637 | " | 40.5 | 4.8 | 2 | 5 | 4 " | 4 Gd.≠ |
| 3858 | " | 40.25 | 4.9 | 2 | 5 | 5 Gd. | 4 " |
| 2618 | " | 40.5 | 4.8 | 2 | 5 | 4 Gd.≠ | 4 " |
| 6799 | " | 41.5 | 4.6 | 5 | 5 | 4 " | 5 Gd. |
| 6929 | " | 42.0 | 5.0 | 5 | 5 | 5 Gd. | 5 Gd. |
| 6953 | " | 41.5 | 5.0 | 5 | 5 | 5 " | 6 Gd.- |
| 7034 | " | 42.5 | 5.2 | 5 | 5 | 5 " | 6 Gd.- |
| 7051 | " | 41.25 | 5.3 | 5 | 5 | 5 " | 6 " |
| 79 | " | 42.75 | 4.8 | 5 | 5 | 4 Gd.≠ | 5 Gd. |
| 80 | " | 44.0 | 4.6 | 5 | 5 | 3 Ch.- | 4 Gd.≠ |
| 18 | " | 41.75 | 4.5 | 5 | 5 | 3 " | 4 " |

| Lamb No. | Carcass grade | Carcass weight | Loin ratio | Code no. for breed1/ | Code no. for grade | Estimated grades from equations 2/ No. 1 | No. 2 |
|---|---|---|---|---|---|---|---|
| | | lbs. | | | | | |
| 17 | Good | 43.25 | 4.9 | 5 | 5 | 4 Gd.≠ | 5 Gd. |
| 6523 | " | 43.75 | 4.6 | 5 | 5 | 3 Ch.- | 4 Gd.≠ |
| 6667 | " | 43.5 | 5.0 | 5 | 5 | 4 Gd.≠ | 5 Gd. |
| 6513 | " | 42.0 | 4.8 | 5 | 5 | 4 " | 5 " |
| 6682 | " | 41.5 | 5.0 | 5 | 5 | 5 Gd. | 6 Gd.- |
| 6619 | " | 41.0 | 4.9 | 5 | 5 | 4 Gd.≠ | 5 Gd. |
| 6680 | " | 40.0 | 5.3 | 5 | 5 | 6 Gd.- | 6 Gd.- |
| 72 | " - | 41.5 | 5.3 | 3 | 6 | 5 Gd. | 5 Gd. |
| 229 | " - | 40.75 | 5.3 | 3 | 6 | 5 " | 5 " |
| 267 | " - | 43.0 | 5.1 | 3 | 6 | 5 " | 5 " |
| 261 | " - | 41.0 | 5.1 | 3 | 6 | 5 " | 5 " |
| 3671 | " - | 40.0 | 5.4 | 2 | 6 | 6 Gd.- | 5 " |
| 6316 | " - | 41.75 | 5.6 | 5 | 6 | 6 " | 6 Gd.- |
| 6836 | " - | 40.5 | 5.1 | 5 | 6 | 5 Gd | 6 " |
| 6962 | " - | 41.75 | 5.1 | 5 | 6 | 5 " | 6 " |
| 7061 | " - | 40.0 | 5.8 | 5 | 6 | 7 Md.≠ | 7 Md.≠ |
| 19 | " - | 41.25 | 5.0 | 5 | 6 | 5 Gd. | 6 Gd.- |
| 20 | " - | 43.75 | 5.1 | 5 | 6 | 5 " | 5 Gd. |
| 1 | " - | 40.5 | 4.8 | 5 | 6 | 4 Gd.≠ | 5 " |
| 6572 | " - | 43.5 | 5.4 | 5 | 6 | 5 Gd. | 6 Gd.- |
| 3953 | Good ≠ | 37.5 | 4.7 | 2 | 4 | 4 Gd.≠ | 4 Gd.≠ |
| 4382 | " ≠ | 35.0 | 4.7 | 2 | 4 | 5 Gd. | 4 " |
| 4337 | " ≠ | 37.25 | 4.8 | 2 | 4 | 5 " | 4 " |
| 4321 | " ≠ | 38.25 | 4.7 | 2 | 4 | 4 Gd.≠ | 4 " |
| 3850 | " ≠ | 39.75 | 5.3 | 2 | 4 | 6 Gd.- | 5 Gd. |
| 3628 | " ≠ | 38.0 | 4.7 | 2 | 4 | 4 Gd.≠ | 4 Gd.≠ |
| 3581 | " ≠ | 36.5 | 4.4 | 2 | 4 | 4 " | 4 " |
| 3810 | " ≠ | 36.25 | 4.2 | 2 | 4 | 3 Ch.- | 3 Ch.- |
| 2638 | " ≠ | 39.25 | 4.6 | 2 | 4 | 4 Gd.≠ | 4 Gd.≠ |
| 2D107 | " ≠ | 36.0 | 4.9 | 1 | 4 | 5 Gd. | 4 " |
| 2S109 | " ≠ | 35.0 | 5.8 | 1 | 4 | 7 Md.≠ | 6 Gd.- |
| 3S102 | " ≠ | 35.75 | 4.8 | 1 | 4 | 5 Gd. | 4 Gd.≠ |
| 3S127 | " ≠ | 36.75 | 4.9 | 1 | 4 | 5 " | 4 " |
| 3Sd201 | " ≠ | 36.25 | 4.9 | 1 | 4 | 5 " | 4 " |
| 3Sh228 | " ≠ | 36.5 | 5.6 | 1 | 4 | 7 Md.≠ | 6 Gd.- |
| 3Sh229 | " ≠ | 36.75 | 5.2 | 1 | 4 | 6 Gd.- | 5 Gd. |
| 3Sh301 | " ≠ | 38.5 | 5.1 | 1 | 4 | 5 Gd. | 4 Gd.≠ |
| 3Sh310 | " ≠ | 36.5 | 4.4 | 1 | 4 | 4 Gd.≠ | 3 Ch.- |
| 61 | " ≠ | 39.25 | 4.5 | 5 | 4 | 4 " | 5 Gd. |
| 15 | " ≠ | 37.0 | 5.8 | 5 | 4 | 5 Gd. | 6 Gd.- |
| 2 | " ≠ | 35.75 | 4.6 | 5 | 4 | 5 " | 6 " |
| 3946 | " | 38.0 | 5.3 | 2 | 5 | 6 Gd.- | 5 Gd. |
| 4003 | " | 37.0 | 5.2 | 2 | 5 | 6 " | 5 " |
| 4127 | " | 37.5 | 4.9 | 2 | 5 | 5 Gd. | 5 " |
| 4191 | " | 39.0 | 4.2 | 2 | 5 | 3 Ch.- | 3 Ch.- |
| 4212 | " | 37.5 | 4.8 | 2 | 5 | 5 Gd. | 4 Gd.≠ |
| 4262 | " | 37.5 | 5.1 | 2 | 5 | 5 Gd. | 5 Gd. |
| 35 | " | 38.5 | 4.6 | 3 | 5 | 4 Gd.≠ | 4 Gd.≠ |
| 241 | " | 35.5 | 4.6 | 3 | 5 | 4 " | 5 Gd. |
| 707 | " | 38.5 | 4.8 | 2 | 5 | 4 " | 4 Gd.≠ |

| Lamb No. | Carcass grade | Carcass weight | Loin ratio | Code no. for breed1/ | Code no. for grade | Estimated grades from equations 2/ No. 1 | No. 2 |
|---|---|---|---|---|---|---|---|
| | | lbs. | | | | | |
| 1457 | Good | 37.0 | 4.9 | 2 | 5 | 5 Gd. | 5 Gd. |
| 1570 | " | 35.5 | 4.3 | 2 | 5 | 4 Gd.≠ | 4 Gd.≠ |
| 252 | " | 39.5 | 5.4 | 3 | 5 | 6 Gd.- | 6 Gd.- |
| 103 | " | 39.0 | 4.6 | 2 | 5 | 4 Gd.≠ | 4 Gd.≠ |
| 113 | " | 39.0 | 5.2 | 2 | 5 | 4 " | 5 Gd. |
| 3653 | " | 39.0 | 5.0 | 2 | 5 | 5 Gd. | 4 Gd.≠ |
| 391 | " | 38.5 | 5.2 | 3 | 5 | 5 " | 5 Gd. |
| 460 | " | 38.0 | 4.9 | 2 | 5 | 5 " | 4 Gd.≠ |
| 3859 | " | 37.25 | 4.7 | 2 | 5 | 4 Gd.≠ | 4 " |
| 3731 | " | 35.5 | 4.6 | 2 | 5 | 4 " | 4 " |
| 3712 | " | 35.0 | 4.9 | 2 | 5 | 5 Gd. | 5 Gd. |
| 2593 | " | 37.0 | 5.0 | 2 | 5 | 5 " | 5 " |
| 2651 | " | 37.25 | 5.0 | 2 | 5 | 5 " | 5 " |
| 3Sh230 | " | 36.0 | 5.7 | 1 | 5 | 7 Md.≠ | 6 Gd.- |
| 6836 | " | 39.0 | 5.0 | 5 | 5 | 5 Gd. | 6 Gd.- |
| 6893 | " | 38.0 | 5.2 | 5 | 5 | 5 " | 6 " |
| 66 | " | 36.5 | 4.8 | 5 | 5 | 5 " | 6 " |
| 65 | " | 39.0 | 4.7 | 5 | 5 | 4 Gd.≠ | 5 Gd. |
| 22 | " | 38.0 | 4.8 | 5 | 5 | 5 Gd. | 6 Gd.- |
| 37 | " | 39.0 | 4.6 | 5 | 5 | 4 Gd.≠ | 5 Gd. |
| 14 | " | 37.0 | 4.8 | 5 | 5 | 5 Gd. | 6 Gd.- |
| 7 | " | 35.0 | 4.8 | 5 | 5 | 5 " | 6 " |
| 6636 | " | 37.25 | 5.3 | 5 | 5 | 6 Gd.- | 7 Md.≠ |
| 2693 | " | 38.5 | 4.6 | 5 | 5 | 4 Gd.≠ | 5 Gd. |
| 122 | " - | 39.0 | 4.7 | 3 | 6 | 4 " | 4 Gd.≠ |
| 304 | " - | 38.25 | 5.0 | 3 | 6 | 5 Gd. | 5 Gd. |
| 1503 | " - | 37.25 | 5.5 | 2 | 6 | 6 Gd.- | 6 Gd.- |
| 357 | " - | 38.5 | 5.0 | 3 | 6 | 5 Gd. | 5 Gd. |
| 3318 | " - | 38.5 | 4.8 | 2 | 6 | 4 Gd.≠ | 4 Gd.≠ |
| 3586 | " - | 38.5 | 4.4 | 2 | 6 | 3 Ch.- | 3 Ch.- |
| 356 | " - | 37.75 | 5.0 | 3 | 6 | 5 Gd. | 5 Gd. |
| 3D125 | " - | 36.25 | 4.8 | 1 | 6 | 5 " | 4 Gd.≠ |
| 2S108 | " - | 35.25 | 5.7 | 1 | 6 | 7 Md.≠ | 6 Gd.- |
| 4Sh215 | " - | 35.0 | 5.6 | 1 | 6 | 7 " | 6 " |
| 70 | " - | 37.25 | 5.1 | 5 | 6 | 5 Gd. | 6 Gd.- |
| 38 | " - | 39.5 | 5.2 | 5 | 6 | 5 " | 6 " |
| 25 | " - | 37.0 | 5.0 | 5 | 6 | 5 " | 6 " |
| 30 | " - | 37.0 | 5.8 | 5 | 6 | 7 Md.≠ | 8 Md. |
| 13 | " - | 35.0 | 5.5 | 5 | 6 | 7 " | 8 " |
| 16 | " - | 39.0 | 5.1 | 5 | 6 | 5 Gd. | 6 Gd.- |
| 6634 | " - | 37.5 | 4.8 | 5 | 6 | 5 " | 6 " |
| 6459 | " - | 39.5 | 5.5 | 5 | 6 | 6 Gd.- | 7 Md.≠ |
| 6661 | " - | 38.25 | 5.1 | 5 | 6 | 6 " | 7 " |
| 6623 | " - | 37.75 | 4.6 | 5 | 6 | 4 Gd.≠ | 5 Gd. |
| 6597 | " - | 36.75 | 5.4 | 5 | 6 | 6 Gd.- | 7 Md.≠ |
| 2D100 | Good ≠ | 32.0 | 4.6 | 1 | 4 | 5 Gd. | 4 Gd.≠ |
| 3D115 | " ≠ | 30.75 | 4.3 | 1 | 4 | 4 Gd.≠ | 4 " |
| 1D107 | " ≠ | 34.5 | 4.5 | 1 | 4 | 4 " | 4 " |
| 2S107 | " ≠ | 33.25 | 5.6 | 1 | 4 | 7 Md.≠ | 6 Gd.- |

| Lamb No. | Carcass grade | Carcass weight | Loin ratio | Code no. for breed[1]/ | Code no. for grade | Estimated grades from equations [2]/ No. 1 | No. 2 |
|---|---|---|---|---|---|---|---|
| | | lbs. | | | | | |
| 3S116 | Good ≠ | 32.25 | 5.4 | 1 | 4 | 7 Md.≠ | 6 Gd.- |
| 3sd218 | " ≠ | 31.5 | 5.1 | 1 | 4 | 6 Gd.- | 5 Gd. |
| 3sd217 | " ≠ | 32.5 | 4.9 | 1 | 4 | 5 Gd. | 5 " |
| 4sd205 | " ≠ | 31.0 | 4.8 | 1 | 4 | 5 " | 5 " |
| 4sd207 | " ≠ | 30.75 | 5.0 | 1 | 4 | 6 Gd.- | 5 " |
| 4sd320 | " ≠ | 31.75 | 4.8 | 1 | 4 | 5 Gd. | 5 " |
| 4131 | " | 34.75 | 4.9 | 2 | 5 | 5 " | 5 " |
| 4322 | " | 31.0 | 4.9 | 2 | 5 | 5 " | 5 " |
| 4100 | " | 34.75 | 5.3 | 2 | 5 | 6 Gd.- | 6 Gd.- |
| 2674 | " | 30.25 | 4.3 | 2 | 5 | 4 Gd≠ | 4 Gd.≠ |
| 4D104 | " | 32.0 | 5.2 | 1 | 5 | 6 Gd.- | 5 Gd. |
| 3S112 | " | 32.5 | 5.5 | 1 | 5 | 7 Md.≠ | 6 Gd.- |
| 4S108 | " | 31.75 | 5.6 | 1 | 5 | 7 " | 6 " |
| 3sd215 | " | 30.25 | 5.1 | 1 | 5 | 6 Gd.- | 6 " |
| 3sh237 | " | 31.75 | 5.4 | 1 | 5 | 7 Md.≠ | 6 " |
| 3sd213 | " | 31.25 | 4.6 | 1 | 5 | 5 Gd. | 4 Gd.≠ |
| 4sh213 | " | 34.0 | 5.9 | 1 | 5 | 8 Md. | 7 Md.≠ |
| 4sh214 | " | 34.0 | 5.1 | 1 | 5 | 6 Gd.- | 5 Gd. |
| 4sh309 | " | 34.75 | 5.4 | 1 | 5 | 6 " | 5 " |
| 3sh305 | " | 30.0 | 5.2 | 1 | 5 | 6 " | 6 Gd.- |
| 5sh302 | " | 34.0 | 5.2 | 1 | 5 | 6 " | 5 Gd. |
| 4sd319 | " | 33.0 | 4.9 | 1 | 5 | 5 Gd. | 5 " |
| 2672 | " | 32.25 | 4.5 | 4 | 5 | 4 Gd.≠ | 5 " |
| 743 | " - | 34.5 | 5.0 | 2 | 6 | 5 Gd. | 5 Gd. |
| 765 | " - | 34.5 | 4.9 | 2 | 6 | 5 " | 5 " |
| 2657 | " - | 34.5 | 4.7 | 2 | 6 | 5 " | 5 " |
| 3D108 | " - | 32.0 | 5.3 | 1 | 6 | 6 Gd.- | 6 Gd.- |
| 3D116 | " - | 33.25 | 5.1 | 1 | 6 | 6 " | 5 Gd. |
| 3sh223 | " - | 31.0 | 5.9 | 1 | 6 | 8 Md. | 7 Md.≠ |
| 4sh205 | " - | 30.5 | 5.3 | 1 | 6 | 6 Gd.- | 6 Gd.- |
| 6857 | " - | 34.0 | 5.5 | 5 | 6 | 7 Md.≠ | 8 Md. |
| 64 | " - | 32.75 | 5.1 | 5 | 6 | 6 Gd.- | 7 Md.≠ |
| 77 | " - | 34.5 | 5.0 | 5 | 6 | 5 Gd. | 7 " |
| | | | | | | | |
| 2D113 | Good ≠ | 28.5 | 4.6 | 1 | 4 | 5 Gd. | 5 Gd. |
| 3Ds222 | " ≠ | 29.75 | 5.8 | 1 | 4 | 8 Md. | 7 Md.≠ |
| 4611 | " | 27.25 | 5.5 | 2 | 5 | 7 Md.≠ | 7 " |
| 3D128 | " | 29.0 | 5.3 | 1 | 5 | 7 " | 6 Gd.- |
| 2D114 | " | 29.5 | 4.8 | 1 | 5 | 5 Gd. | 5 Gd. |
| 3D117 | " | 28.0 | 5.0 | 1 | 5 | 6 Gd.- | 6 Gd.- |
| 4sd317 | " | 26.75 | 5.3 | 1 | 5 | 7 Md.≠ | 5 Gd. |
| 2691 | " | 29.5 | 5.0 | 4 | 5 | 6 Gd.- | 7 Md.≠ |
| 3S107 | " - | 29.0 | 5.8 | 1 | 6 | 8 Md. | 7 " |
| 3sh212 | " - | 29.25 | 4.9 | 1 | 6 | 6 Gd.- | 5 Gd. |
| | | | | | | | |
| 4839 | Good ≠ | 24.75 | 5.0 | 2 | 4 | 6 Gd.- | 7 Md.≠ |
| 3sd220 | " | 23.75 | 5.3 | 1 | 5 | 7 Md.≠ | 7 " |
| 4sd301 | " | 23.5 | 5.1 | 1 | 5 | 7 " | 7 " |
| 4sd322 | " | 22.0 | 5.1 | 1 | 5 | 7 " | 7 " |
| 4sd306 | " - | 24.25 | 4.8 | 1 | 6 | 6 Gd.- | 6 Gd.- |

| Lamb No. | Carcass grade | Carcass weight | Loin ratio | Code no. for breed[1] | Code no. for grade | Estimated grades from equations [2] No. 1 | No. 2 |
|---|---|---|---|---|---|---|---|
| | | lbs. | | | | | |
| 193 | Medium | 38.25 | 5.4 | 2 | 8 | 6 Gd.- | 5 Gd. |
| 6976 | " | 35.5 | 5.4 | 5 | 8 | 6 " | 7 Md.≠ |
| 68 | " | 35.0 | 5.4 | 5 | 8 | 6 " | 7 " |
| 73 | " | 36.0 | 5.7 | 5 | 8 | 5 Gd. | 6 Gd.- |
| 34 | " | 35.5 | 5.6 | 5 | 8 | 7 Md.≠ | 8 Md. |
| 28 | " | 38.5 | 5.2 | 5 | 8 | 5 Gd. | 6 Gd.- |
| 4 | " | 38.5 | 5.0 | 5 | 8 | 5 " | 6 " |
| 6535 | " | 36.5 | 5.6 | 5 | 8 | 7 Md.≠ | 8 Md. |
| | | | | | | | |
| 399 | Medium | 33.75 | 5.5 | 2 | 8 | 7 Md.≠ | 6 Gd.- |
| 63 | " | 34.0 | 5.1 | 5 | 8 | 6 Gd.- | 7 Md.≠ |
| 71 | " | 32.25 | 5.3 | 5 | 8 | 6 " | 8 Md. |
| 32 | " | 32.0 | 5.1 | 5 | 8 | 6 " | 7 Md.≠ |
| 29 | " | 30.0 | 5.1 | 5 | 8 | 6 " | 7 " |
| 40 | " | 31.5 | 5.6 | 5 | 8 | 7 Md.≠ | 8 Md. |
| 27 | " | 34.5 | 5.5 | 5 | 8 | 7 " | 8 " |
| 2628 | " | 32.5 | 4.9 | 4 | 8 | 5 Gd. | 6 Gd.- |
| | | | | | | | |
| 4809 | Medium≠ | 28.0 | 5.6 | 2 | 7 | 7 Md.≠ | 7 Md.≠ |
| 1706 | " ≠ | 28.0 | 6.2 | 2 | 7 | 9 Md.- | 9 Md.- |
| 2696 | " ≠ | 29.5 | 5.1 | 2 | 7 | 6 Gd.- | 6 Gd.- |
| 4431 | " | 23.5 | 6.0 | 2 | 8 | 8 Md. | 8 Md. |
| 4650 | " | 29.75 | 6.1 | 2 | 8 | 8 " | 8 " |
| 3715 | " | 28.5 | 5.8 | 2 | 8 | 8 " | 8 " |
| 2638 | " | 29.5 | 5.7 | 4 | 8 | 8 " | 8 " |
| 4669 | " - | 28.5 | 6.0 | 2 | 9 | 8 " | 8 " |
| 3sh306 | " - | 26.0 | 5.1 | 1 | 9 | 6 Gd.- | 6 Gd.- |
| 3sh315 | " - | 29.0 | 5.6 | 1 | 9 | 7 Md.≠ | 7 Md.≠ |
| | | | | | | | |
| 3sh214 | Medium≠ | 23.5 | 5.6 | 1 | 7 | 8 Md. | 8 Md. |
| 3s108 | " ≠ | 21.5 | 5.2 | 1 | 7 | 7 Md.≠ | 7 Md.≠ |
| 4723 | " | 23.25 | 5.2 | 2 | 8 | 7 " | 7 " |
| 4696 | " | 23.0 | 5.6 | 2 | 8 | 8 Md. | 8 Md. |
| 3s105 | " | 22.25 | 5.6 | 1 | 8 | 8 " | 8 " |
| 4775 | " - | 23.75 | 5.9 | 2 | 9 | 9 Md.- | 9 Md.- |
| 4591 | " - | 22.5 | 6.1 | 2 | 9 | 9 " | 9 " |
| | | | | | | | |
| 4389 | Common≠ | 21.0 | 6.3 | 2 | 10 | 10 Com≠ | 10 Com≠ |
| 4752 | " ≠ | 21.75 | 6.1 | 2 | 10 | 9 Md.- | 9 Md.- |
| 4351 | " | 20.5 | 6.4 | 2 | 11 | 10 Com≠ | 10 Com≠ |
| 4767 | " | 22.0 | 6.3 | 2 | 11 | 10 " | 10 " |
| 4838 | " | 21.5 | 6.0 | 2 | 11 | 9 Md.- | 9 Md.- |
| 4473 | " | 21.0 | 6.5 | 2 | 11 | 10 Com≠ | 10 Com≠ |
| 4sh306 | " | 20.0 | 6.3 | 1 | 11 | 10 " | 10 " |
| 4697 | " - | 21.25 | 7.0 | 2 | 12 | 12 Com- | 11 Com. |
| 4sd309 | " - | 21.25 | 6.1 | 1 | 12 | 9 Md.- | 9 Md.- |
| | | | | | | | |
| 4636 | Common≠ | 19.5 | 6.3 | 2 | 10 | 10 Com≠ | 10 Com≠ |
| 4841 | " ≠ | 19.75 | 6.2 | 2 | 10 | 10 " | 10 " |
| 4734 | " ≠ | 19.0 | 5.8 | 2 | 10 | 9 Md.- | 9 Md.- |
| 4743 | " | 19.75 | 6.5 | 2 | 11 | 10 Com≠ | 10 Com≠ |
| 4290 | " | 17.25 | 6.0 | 2 | 11 | 10 " | 10 " |

| Lamb No.: | Carcass grade | Carcass weight | Loin ratio | Code no. for breed[1] | Code no. for grade | Estimated grades from equations [2] | |
|---|---|---|---|---|---|---|---|
| | | lbs. | | | | No. 1 | No. 2 |
| 1615 | Common- | 17.5 | 6.9 | 2 | 12 | 12 Com- | 12 Com- |
| 1349 | " - | 18.0 | 5.8 | 2 | 12 | 9 Md.- | 9 Md.- |
| 1515 | " - | 19.50 | 6.0 | 2 | 12 | 9 " | 10 Com+ |
| 1644 | Cull | 16.5 | 6.9 | 2 | 14 | 12 Com- | 12 Com- |
| 1512 | " | 19.75 | 6.2 | 2 | 14 | 10 Com+ | 10 Com+ |
| 1507 | " | 16.25 | 6.8 | 2 | 14 | 12 Com- | 12 Com- |

[1]/ Key to Breed code numbers:
   1. Straight mutton type Vermont lambs
   2. Grade ewes and mutton type rams, and Corriedale lambs:
        Tennessee, mutton type
        Purdue and Dubois "HC" and "B"
   3. Crossbred lambs, "HR"
   4. Grade ewes and Rambouillet rams:
        6 Tennessee Rambouillet lambs
   5. Straight Rambouillet lambs:
        Purdue and Dubois Rambouillet lambs
        New Mexico lambs

[2]/ Equation No. 1:
Code No. for grade = -3.40 -.10 X weight + 2.44 X loin ratio.

R = .8249 +.0127

Standard error of estimates = 1.30 thirds of grade

Equation No. 2:
Code No. for grade = -.89 -.15 X weight + 2.06 X loin ratio + .47 X Breed
                                                              code number.

R = .8731 +.0094

Standard error of estimates = 1.12 thirds of grade

## Comparison of estimated grades and committee grades

### Equation No. 1

No. estimated grades in same third of grade as committee grade     90    30.7 %

| " | " | " | 1/3 grade higher than committee grade | 53 | 18.1 |
| " | " | " | "  " lower  "  "  " | 31 | 27.7 |
| " | " | " | 2/3 " higher " " " | 30 | 10.2 |
| " | " | " | "  " lower  "  "  " | 20 | 6.8 |
| " | " | " | 3/3 " higher " " " | 7 | 2.4 |
| " | " | " | "  " lower  "  "  " | 10 | 3.4 |
| " | " | " | 4/3 " higher " " " | 2 | .7 |
| " | " | " | "  " lower  "  "  " | 0 | |

No. estimated grades in same full grade as committee grade     220    75.1 %

"    "    "    one grade higher than committee grade     37    12.6

"    "    "    "  " lower  "  "  "     36    12.3

### Equation No. 2

No. estimated grades in same third of grade as committee grade 110    37.5 %

| " | " | " | 1/3 grade higher than committee grade | 74 | 25.3 |
| " | " | " | "  " lower  "  "  " | 55 | 18.8 |
| " | " | " | 2/3 " higher " " " | 22 | 7.5 |
| " | " | " | "  " lower  "  "  " | 22 | 7.5 |
| " | " | " | 3/3 " higher " " " | 6 | 2.1 |
| " | " | " | "  " lower  "  "  " | 3 | 1.0 |
| " | " | " | 4/3 " higher " " " | 1 | .3 |
| " | " | " | "  " lower  "  "  " | 0 | |

No. estimated grades in same full grade as committee grade     234    79.9 %

"    "    "    one grade higher than committee grade     45    15.3

"    "    "    "  " lower  "  "  "     14    4.8

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## Summary

1. The dressing percentage for lambs of any grade increases as the lambs become heavier.

2. For any grade the length, depth, width, and thickness of fat carcass measurements increases as the carcasses increase in weight.

3. Within a grade there is practically no change in the relationship of one carcass dimension to another resulting from a change in weight.

4. Dressing percentage drops rather sharply from one grade to the next lower grade when weight is held constant.

5. As between carcasses of comparable weight, those in the lower grade are both longer and deeper than those in the higher grade, but the higher grade carcasses are wider and have a thicker covering of fat.

6. The ratio of length to width of carcass for any weight group decreases from one grade to the grade immediately higher.

7. The ratio of length to depth for carcasses of comparable weight is practically constant.

8. The highest coefficient of correlation was obtained from the ratio length of body to width of loin in relation to carcass grade; the lowest from the ratio of length of body to depth of chest.

9. Combining the length of body to width of loin ratio, carcass weight, and breeding with carcass grade a coefficient of correlation of 0.87 $\pm$.01 was obtained.

10. In estimating grade by use of a formula involving ratio of length to width of loin and weight, 75.1 percent of the estimated grades corresponded with the composite committee grade, 12.6 percent were one grade higher, and 12.3 percent were one grade lower.

11. By using a formula that recognizes weight, ratio of length to width of loin, and breed, 79.9 percent of the estimated grades were found to correspond with the composite committee grade, 9.9 percent were one grade higher, and 10.2 percent were one grade lower.